



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,188	04/02/2001	Zhijiang Wang	021169000500	8367

20350 7590 08/12/2003

TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER

MENEFEE, JAMES A

ART UNIT PAPER NUMBER

2828

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/824,188

Applicant(s)

WANG ET AL.

Examiner

James A. Menefee

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Response to Amendment***

In response to the amendment filed 24 June 2003, claims 1-2 and 6-8 are amended.

Claims 1-8 are pending.

***Drawings***

The corrected or substitute drawings were received on 24 June 2003. These drawings are acceptable.

***Terminal Disclaimer***

---

The terminal disclaimer filed on 24 June 2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent 6,101,199 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Po (previously cited US 6,516,124). Po discloses an optical fiber having a core 200 doped with an active species, an inner cladding 210 surrounding the core, an outer cladding 220 surrounding the inner cladding, where the cross sectional shape of the inner cladding 210 is an asymmetric and symmetry broken polygon. At least one boundary 211 of the boundaries forming the cross section of the inner cladding is an arc (see Fig. 3). While the figure shows the cross sectional shape to be symmetrical, Po states that additional shapes for the inner cladding may be used, thus making the cross section asymmetrical (col. 4 lines 4-23).

---

Claims 2, 4, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Muendel (previously cited US 5,533,163).

Regarding claim 2, Muendel discloses an article for gain application including a laser diode array, a double cladding fiber laser with the core doped with an active species, said fiber including an inner cladding, outer cladding, and inherently an aperture for allowing light to enter. There is a coupling optical system disposed between the laser diode array and the fiber to focus the beam from the array to the fiber. The cross sectional shape of the inner cladding is an asymmetric symmetry broken polygon.

Regarding claim 4, the symmetry broken cladding may be rectangular.

Regarding claim 7, Muendel discloses that the optical system may be an optical fiber laser.

Art Unit: 2828

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muendel in view of Tankala et al. (previously cited US 6,477,307).

Muendel discloses an optical fiber having a core doped with an active species, an inner cladding surrounding the core, an outer cladding surrounding the inner cladding, where the cross sectional shape of the inner cladding is an asymmetric and symmetry broken polygon. Muendel further discloses the limitations of claim 2 as shown above. It is not disclosed that at least one of the boundaries forming the polygon shape is an arc. Tankala teaches an optical fiber where a boundary of the cross section of the inner cladding is an arc. It would have been obvious to one skilled in the art to incorporate an arc in the boundary of the cross section of the inner cladding in order to enhance scattering of the pump radiation for more effective absorption of the core, as taught by Tankala (col. 2 lines 40-43).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muendel. Muendel discloses the system of claim 2 as shown above, but does not disclose that it may be an optical amplifier. It is well known that optical amplifiers may include means of coupling signals to be amplified into an active fiber. It would have been an obvious art known substitution for one

skilled in the art to use the specific fiber disclosed by Muendel as the optical fiber of the optical amplifier.

### ***Response to Arguments***

Applicant's arguments filed 24 June 2003 have been fully considered but they are not persuasive.

Applicant argues, "Po does not teach asymmetric cladding shapes. The problem solved in the present invention is an unrecognized problem in the prior art. Local modes are problems in all the cross sectional shapes disclosed by Po because of the symmetric shapes" (p. 6 of response). This argument is not persuasive. First, it does not matter that the problem solved by the present invention is not mentioned in the prior art, if the prior art discloses the claimed invention. Po discloses an inner cladding cross section in Fig. 3 as defined by opposing planes 212,214 connected by arc section 211. The planes 212,214 may be offset by an angle, as shown in the section of col. 4 mentioned in the above rejection. Should the planes 212,214 be offset by such an angle, as Po discloses, then the shape of the inner cladding will not be symmetrical.

Applicant argues, "In the invention disclosed by Muendel, the need of asymmetric and symmetry-broken cross sectional shape of inner cladding is unrecognized and undesired." (p. 7-8 of response). Applicant goes on to argue various points that allegedly show that Muendel's inner cladding will necessarily be symmetrical. However, Muendel shows an asymmetrical inner cladding, for example in Fig. 10C. Applicant contends that "the requirement [of Muendel] excludes the use of symmetric and symmetry-broken cross-sectional shapes of inner cladding." (p. 7). If this were the case, Muendel would not disclose the asymmetrical cladding of Fig. 10C, a 30-60-90 triangle.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
**QUYEN LEUNG**  
**PRIMARY EXAMINER**

JM  
August 11, 2003

  
SPE Paul Ip